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TABLE IX. *The Rh Blood Groups of a Mixed Series of 61 Luo and 111 Kikuyu*

Phenotype	Commonest genotype	Number observed	Frequency observed	Frequency expected	Number expected
ccDee	R_0R_0	97	0·5640	0·5793	99·65
CcDee	R_1R_0	24	0·1395	0·1325	22·79
CCDee	R_1R_1	2	0·0116	0·0074	1·27
ccDEe	R_2R_0	35	0·2035	0·1743	29·98
ccDEE	R_2R_2	1	0·0058	0·0127	2·18
CcDEe	R_1R_2	1	0·0058	0·0194	3·33
ccD^{u}ee	R^u_0r	3	0·0174	0·0179	3·08
ccddee	rr	7	0·0407	0·0418	7·19
Ccddee	R′r	1	0·0058	0·0058	1·00
ccddEe	R″r	1	0·0058	0·0058	1·00
CcD^u e	R^u_0R'	0	0·0000	0·0011	0·20
ccD^{u}Ee	R^u_0R''	0	0·0000	0·0011	0·20
CCddee	R′R′	0	0·0000	0·0002	0·03
CcddEe	R′R″	0	0·0000	0·0004	0·07
ccddEE	R″R″	0	0·0000	0·0002	0·03
		172	0·9999	0·9999	172·00

Chromosome frequencies

R_0	cDe	0·5550
R_1	CDe	0·0730
R_2	cDE	0·0992
R^u_0	cD^{u}e	0·0399
r	cde	0·2045
R′	Cde	0·0142
R″	cdE	0·0142
		1·0000

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TABLE X. *The P Blood Groups of the Kikuyu*

	Number observed	Frequency
P–positive	64	0·970
P–negative	2	0·030
Total	66	1·000

Gene frequencies

P	0·826
p	0·174
Total	1·000

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TABLE XI. *The ABO blood groups of the Masai*

Group	Number observed	Frequency observed	Frequency expected	Number expected
O	112	0·4807	0·5034	117·29
A	47	0·2017	0·1762	41·05
B	71	0·3047	0·2800	65·24
AB	3	0·0129	0·0403	9·40
	233	1·0000	0·9999	232·98

[p.58a]

18: Allison et al. D-5 (1949) 1952
FL11 Luo FL11
Kikuyu FL10
MASAI FL12

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Gene frequencies

O	0·7095
A	0·1148
B	0·1756
	0·9999

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TABLE XII. *Collected Gene Frequencies : Kenya*

	Kikuyu	Luo	Mixed Series: Luo and Kikuyu	Masai
O	0·6882	0·6881	0·7145	0·7095
A_1	0·1113	0·1127	0·1077	0·1148
A_2	0·0661	0·0362	0·0435	
B	0·1343	0·1629	0·1342	0·1756
MS	0·2088	0·1010	0·1642	
Ms	0·3799	0·4068	0·3619	
NS	0·0841	0·1285	0·1124	
Ns	0·3272	0·3637	0·3614	
R_1 CDe	0·0654	—	0·0730	
R cDE	0·0645	—	0·0992	
R_2 cDe	0·6159	0·8174	0·5550	
R^o cD^{o}e	0·0942	0·0474	0·0399	
r cde	0·1287	0·0415	0·2045	
R′ Cde	0·0313	0·0469	0·0142	
R″ cdE	—	0·0469	0·0142	

DISCUSSION

The ABO blood group frequencies of a large number of East African tribes have already been studied by Elsdon-Dew (1939). Readers who wish to obtain a general view of the distribution of the ABO groups in the region as a whole should consult that paper and especially charts 4 and 8. If the gene frequencies given in tables IV and XI of the present paper are interpolated in chart 4 their relationship to the rest of the region will be clearly seen as well as whether the differences from earlier data are statistically significant (on a basis of $P=0·05$). It should be noted, however, that we find a B frequency among the Luo significantly higher than that determined by Elsdon-Dew. His figures for ABO frequencies, based on the examination of 440 persons, are, of course, to be preferred to ours—or rather, the total observations should so be accepted as giving the best frequency estimate. For the Kikuyu, on the other hand, we find a significantly higher A frequency than Elsdon-Dew. Here, again, the combined results should give the best estimate. The Masai with their high B frequency appear unique in this part of Africa. Of Africans generally their ABO frequencies most

[p.58b]

18: Allison et al. D-5 (1949) 1952
FL11 Luo FL11
Kikuyu FL10
Masai FL12

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resemble those of the Ankonde of Nyasaland who possibly contain an Asiatic strain. The high B frequency of the Masai cannot be explained in a simple manner as being derived from Egypt, since the Egyptians have a very high frequency of A as well as of B.

No previous determinations have been published of A_2 frequencies in East Africa, and indeed very few from Africa at all, but it is known, mainly from observations on American Negroes, that A_2 is about as common in Africans as in Europeans. Our observations confirm this.

The MNS results support the slowly growing mass of data showing that pure Africans generally have about equal M and N frequencies, and that the gene S is much rarer than in Europe and about equally divided between the M and N genes. The scattered data will shortly be collated and discussed by Mourant (1953).

The high P frequency found among the Kikuyu is similar to that found in all African populations that have been tested. The strength of P reactions varies widely from one individual to another in all populations, but in the Kikuyu as in other African populations the average strength of the P reactions is much greater than among non-Africans.

Twenty Luo were also tested for the Kidd or Jk^a antigen. All but one were found to be positive. Thus in this population as among West Africans the frequency of this antigen is much higher than among Europeans.

The Rh results are the most difficult to interpret, and especially those of the Luo. It is quite clear that the latter have a very high frequency of the chromosome cDe and a very low one (for Africa) of cde. However, though observed and calculated phenotype

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[Bibliography - see also p. 59b]

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frequencies agree well, it cannot be said with certainty that all the C and E genes are, as assumed, in the respective combinations Cde and cdE; it is possible that the chromosomes CDe and cDE are present in the phenotypes CcDee and ccDEe. The Kikuyu Rh groups are easier to interpret. The chromosome cDe is still very abundant though less so than in the Luo, while cde remains rare.

The mixed series of specimens shows less extreme values for both cDe and cde than either of the pure series, suggesting that the extreme character of both of the latter series is in part an accident of sampling. Moreover, individual batches of specimens from different areas seemed to have characters of their own and, though these variations were scarcely significant statistically, it is possible that there is some heterogeneity of Rh constitution even within racial groups. Much more numerous tests must be done on both tribes before their Rh constitution can be clearly interpreted.

Taking all blood group systems into consideration, it is surprising to see how slight are the differences between the Nilotic Luo and the Eastern Bantu Kikuyu. From the present study and the results of Elsdon-Dew (1939) the tentative conclusion can be drawn that the East African native population (apart from the Masai and other Hamitic tribes) is, on the whole, fairly uniform.

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